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March 13, 2012

Michael A. Bussell, Director
Office of Water and Watersheds
EPA – Region 10
1200 Sixth Avenue, Suite 900
Seattle, WA 98101-3140

RE: Kalispel Tribe's Concerns with the Pend Oreille River Temperature TMDL

Dear Mr. Bussell:

The Kalispel Tribe of Indians is profoundly disappointed by your February 28, 2012 letter regarding the Pend Oreille River Temperature TMDL. Your letter demonstrates that EPA either misunderstood or disregarded the commitments it made to the Tribe at our November 30, 2011 meeting. Those commitments were to (1) investigate the merits of the Tribe's claim that it has the right to determine compliance with its own water quality criteria in the TMDL, and (2) report back to the Tribe before deciding whether to approve the TMDL. In any event, by failing to address EPA's first commitment to the Tribe and ignoring the second, your letter delivered a blow to the Tribe's hopes that EPA was finally going to evaluate the Tribe's concerns as a trustee, discuss its findings with the Tribe, and either address the Tribe's concerns through the TMDL process or equip the Tribe with the tools to protect its waters through a different mechanism. The Tribe is particularly upset that although the Department of Ecology was not copied on the email transmitting your letter, Ecology contacted the Tribe to discuss the content of your letter before the Tribe had a chance to review it.

The most disturbing aspect of your letter, however, is that it is merely the most recent manifestation of a systemic breach of EPA's trust obligation to the Tribe. Documents recently obtained by the Tribe from Ecology through a Public Records Act request show that EPA helped the regulated community persuade Ecology to abandon its decision to use direct daily comparisons to determine temperature impairment,¹ that EPA has managed the Tribe as a problem throughout much of the TMDL process even though EPA agreed in the 2005 MOA to be the lead on an interstate TMDL to address impairment to tribal waters,² that EPA has divulged tribal concerns to Ecology without extending the same courtesy to the Tribe,³ that EPA authored responses for Ecology to the Tribe's TMDL comments,⁴ that EPA sat on Ecology's TMDL dispute resolution panel,⁵ and that EPA gave Ecology its blessing on the TMDL long before EPA understood the Tribe's concerns.⁶ Although the Tribe acknowledges the need for EPA to work closely with Ecology during the development of a TMDL, it is also incumbent on EPA to respect the Tribe's status as a coequal sovereign under the Clean Water Act and to act in a manner that is

consistent with its trust obligation to the Tribe.⁷ EPA has so badly misjudged the balancing of its obligations to the State and Tribe in this TMDL process that the Tribe does not believe your project team is in a position to objectively review its concerns. Accordingly, the Tribe requests that you withhold final action on this TMDL until the Tribe has an opportunity to present the concerns outlined below to an independent EPA review team.

The Tribe's central concern is that the TMDL does not protect its sovereign right not to have its water quality impaired by thermal pollution sanctioned through a state TMDL.⁸ This concern arises not because Ecology disputes the right itself,⁹ but because Ecology relies upon a methodology opposed by the Tribe to determine compliance with the Tribe's water quality criteria.¹⁰ Whereas the Tribe's analysis of model output demonstrates that the TMDL will not ensure compliance with Kalispel water quality standards,¹¹ Ecology's cumulative frequency analysis suggests that Kalispel criteria will be met.¹² The question before EPA is how to determine which sovereign's methodology should prevail. Although there may be several ways of reasonably making such a decision, EPA would eviscerate the downstream compliance requirement if it gave Ecology's determination of compliance with Kalispel criteria the same degree of deference as Ecology's determinations of compliance with state criteria. As Ecology's application of CFA to determine compliance with state criteria is arbitrary and capricious in its own right, the application of CFA to the Tribe's criteria necessarily cannot withstand a more searching review.

Documents obtained through the Tribe's Public Records Act request establish that Ecology does not have a rational basis for using CFA to determine impairment of its own temperature standards. Ecology initially evaluated impairment by using conventional paired analysis, a method of analyzing model output that compares natural and existing data from the same river segment on the same day.¹³ This paired analysis demonstrated that non-natural warming below Albeni Falls Dam contributed to water quality violations at Stateline, and revealed multiple violations of more than 3 degrees Celsius at Boundary Dam.¹⁴ Seattle City Light and the U.S. Army Corps of Engineers were concerned by these results and thereafter embarked on an aggressive campaign to persuade Ecology to use CFA instead.¹⁵ Although Ecology was initially resistant to this pressure,¹⁶ it eventually agreed to look into using CFA as an alternative.¹⁷ Ecology's internal records indicate that the Agency was concerned about using CFA because pooling data over a period of days is not consistent with the 1-DMax special temperature criteria for the Pend Oreille River.¹⁸ However, Ecology eventually decided to use a 7-day pooling period because it had evidence that such a time period was protective of fish life and would also subsume the 3 day lag time that the regulated community was citing to justify using CFA.¹⁹

The results of Ecology's 7-day CFA were similar to the results of its initial paired analysis,²⁰ and the Agency decided to revert back to paired analysis because it had no justification for increasing the pooling period beyond 7 days.²¹ The regulated community responded by insisting that Ecology pool data over a 93-day period from June to September.²² Ecology knew that pooling data over a full season would mask impairment and initially resisted the regulated community's efforts to "dog" Ecology's decision not to pool beyond 7 days.²³ However, after a significant staffing change, Ecology relented.²⁴

When the Tribe objected to this decision, Ecology defended it by stating: "EPA has approved this approach in the Willamette temperature TMDL, we have used it for other TMDLs,

and it is supported by Ben Cope and the modeling community. In addition we have not received any indication that EPA has issues with our efforts on this TMDL.”²⁵ This statement bears close scrutiny. While it is true that Ben Cope advised Ecology to look at the Willamette TMDL in order to justify its decision to use CFA,²⁶ Ecology was unable to find any justification for using CFA in that document. In an email to Helen Rueda, Ecology staff specifically noted: “I have looked through the temperature chapter and appendix and there is no description or rationale for using the approach given that I can find. I read where they created the distributions, but cannot find any additional information.”²⁷ Ms. Rueda then put Ecology staff in touch with James Bloom of ODEQ who acknowledged that the Willamette TMDL does not provide much in the way of a justification for using CFA and recommended that staff look at Appendix 4.6 of Chapter 4 of that document.²⁸ After reviewing that Appendix, Ecology staff sent an email to a colleague stating: “[A]lthough I still didn't find the rationale ODEQ used in the attached (maybe you can?), the fact that they said they didn't do much to justify using the cfd [cumulative frequency distribution] in their email is priceless.”²⁹ Considering that Dave Croxton told the Tribe at November's meeting that EPA has no standards for approving or disapproving a TMDL and has never disapproved a TMDL in the State of Washington, EPA's approval of the Willamette TMDL does not provide a rational basis for using CFA on the Pend Oreille River, particularly when Mr. Cope was not familiar enough with the document to know that it provides no justification for using CFA.

Ecology's other justifications for using CFA are equally baseless. The Tribe is not aware of any other TMDL in which Ecology has used CFA to determine temperature impairment over a full season.³⁰ Nor is it clear that the modeling community supports use of CFA on the Pend Oreille River. The TMDL provides no literature reference, peer review report, or other documentation that corroborates this statement. And one of the developers of the model used in the Pend Oreille River TMDL has gone on record as saying that time lag between the scenarios should be considered and not “removed” from model comparisons.³¹ That leaves Ben Cope and a community of modelers representing the polluters and Ecology. The general support of this limited and largely biased community is meaningless unless their support is grounded in the state's water quality standards.

The fact is that this limited community of modelers has never argued that CFA is necessary to achieve compliance with 1-DMax special temperature criteria of the Pend Oreille River. To the contrary, modelers from the Corps have explained that CFA assesses whether “projects or scenarios ha[ve] an *overall impact on the river instead of just a day to day impact*.”³² Similarly, Mr. Cope has defended Ecology's use of CFA as necessary to evaluate “persistence.”³³ Neither of these justifications is moored to a 1-DMax standard. Fidelity to a 1-DMax temperature standard cannot be determined by pooling data over an entire season. Because a seasonal pooling period disregards the prescribed temporal requirement of the 1-DMax standard, Ecology's method of applying CFA is arbitrary and capricious.

Ecology's decision to use CFA also does not withstand biological scrutiny. As mentioned above, Ecology's records indicate that the Agency was reluctant to pool data over 7 days because it did not modify the 1-DMax special temperature criteria for the Pend Oreille River when it adopted a general 7DADMax standard for the rest of the state.³⁴ However, Ecology eventually determined that it could pool data over a 7-day time period because the biological information that it had obtained to support its 7DADMax standard for the rest of the

state indicated that fish would not be biologically harmed if data was pooled over 7 days.³⁵ Ecology's records contain no evidence that it ever made a determination that pooling data over an entire season would be protective of threatened bull trout and their critical habitat.³⁶ If Ecology had made such a determination, EPA would still need to consult with the U.S. Fish and Wildlife Service under Section 7 of the Endangered Species Act.³⁷ As Ecology wholly failed to make such a determination, its TMDL is arbitrary and capricious.

Finally, as explained in more detail in Keta Waters' March 6, 2012 memorandum to the Tribe, Ecology has not provided a rational technical justification for pooling data over an entire season.³⁸ Ecology abandoned its initial decision to determine temperature impairment through paired analysis based on the regulated community's contention that comparing model output at the same location and time for natural and existing conditions resulted in erroneous impairment determinations.³⁹ The regulated community argued that dams had changed the hydrological characteristics of the Pend Oreille River, and that many of the impacts detected through paired analysis were due to the fact that it takes longer for a certain parcel of water to reach the same locations under existing conditions.⁴⁰ To accommodate the 2-3 day lag time caused by dams and ensure that temperature impairments reflected "actual" rather than "apparent" changes,⁴¹ the regulated community proposed using CFA as a way of comparing apples to apples.⁴² Ecology's subsequent decision to use a 93-day pooling period bears no relationship to the justification for using CFA. Instead of comparing apples with apples by staggering its paired analysis to account for lag time or selecting a CFA pooling period commensurate with lag time, Ecology responded by analyzing watermelons, i.e. seasonal impairment.⁴³ Determining impairment through a seasonal lens is inconsistent with the State's 1-DMax water quality standard, *compare Northwest Env't'l Advocates v. E.P.A.*, 3:05-CV-01876-AC, 2012 WL 653757 at *10 (D. Or. Feb. 28, 2012) ("Oregon's temperature standards are expressed as a seven-day average of the daily maximum (7DADM), which describes the average temperatures that fish would be exposed to over a week, rather than in a single day."), and by obscuring the magnitude and frequency of temperature impairment,⁴⁴ creates a much more nefarious compliance problem than the one it was designed to correct.

The documents cited herein, a copy of which is attached for inclusion in the administrative record, demonstrate that Ecology's use of a seasonal CFA to determine temperature impairment of state standards is arbitrary and capricious. A seasonal pooling period not only creates a system of thermal crediting that has no basis in the special temperature criteria of the Pend Oreille River but also grossly overcompensates for the short time lags that purportedly justify using CFA in the first place. Moreover, there is no evidence in the record that a seasonal pooling protects the biological uses that state water quality standards are designed to protect. The real basis of Ecology's decision is a desire to appease the regulated community,⁴⁵ which political consideration is not among the factors that Congress has instructed states to consider when creating a TMDL. 33 U.S.C. § 1313(d)(1)(D) ("Each State shall estimate for the waters identified in paragraph (1)(B) of this subsection the total maximum daily thermal load required to assure protection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife. Such estimates shall take into account the normal water temperatures, flow rates, seasonal variations, existing sources of heat input, and the dissipative capacity of the identified waters or parts thereof. Such estimates shall include a calculation of the maximum heat input that can be made into each such part and shall include a margin of safety which takes into account any lack of knowledge concerning the development of thermal water quality criteria for

such protection and propagation in the identified waters or parts thereof.”). “In situations where Congress has made clear that an agency’s finding must be based on science alone, an agency’s decision that ‘was in any material way influenced by political concerns’ cannot be upheld.” *Northwest Env’tl Advocates*, 2012 WL 653757 at *28 (quoting *Earth Island Inst. v. Hogarth*, 494 F.3d 757, 768 (9th Cir. 2007)). EPA needs to correct Ecology’s mistaken belief that it has the discretion to disregard the Clean Water Act.⁴⁶

As the record in this matter clearly demonstrates that CFA masks the frequency and magnitude of violations of tribal water quality standards,⁴⁷ and fails to account for the upstream warming contributing to those violations,⁴⁸ Ecology’s decision to use CFA to determine compliance with Kalispel water quality standards must also fail under whatever heightened review EPA chooses to give that determination. That being said, the Tribe’s foremost goals in the TMDL process are to protect its sovereignty and to remedy the environmental injustices that have been and are being inflicted on Kalispel people by the impounded river system. The Tribe is open to any solution so long as the final TMDL protects the Tribe’s sovereign right to determine compliance with its own water quality standards and sets allocations that will address impairment of Kalispel waters. It may even possible to structure a solution that does not expand the regulatory burden that exists in the current TMDL.

The Tribe sincerely hopes that this letter inspires EPA to reevaluate the manner in which it has engaged the Tribe to date, and to implement its trust obligation to the Tribe more robustly in the future. The Kalispel Tribe has One River, and it needs the help of its trustee to protect it. The Tribe looks forward to discussing a path forward with you and an appropriate team of EPA representatives before EPA takes final action on this TMDL.

Sincerely,



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Jeff Lape, Director, Office of Science and Technology, EPA Office of Water
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Scott Akin, Deputy Regional Director of Indian Services, BIA NW Area Office
Grant Pfeifer, Eastern Regional Director, Department of Ecology

Encls: Index of End Note Documents; Kalispel Tribe’s March 13, 2012 FOIA Request to EPA

¹ Joint email from Ben Cope, EPA, and Tarang Khangaonkar, Seattle City Light consultant, to Ecology, EPA, and Seattle City Light (Dec. 6, 2007) (noting that Cope and Tarang “worked together on this email” and that the email “represents a joint viewpoint on the Pend Oreille TMDL issues presented by Tarang last week”; stating that the Willamette and Pend Oreille rivers are similar and that Cope and Tarang “are impressed” with the Willamette TMDL’s use of cumulative frequency analysis); email from Christine Pratt, Seattle City Light, to the Kalispel Tribe, IDEQ, and Ecology’s TMDL staff (Dec. 11, 2007) (forwarding the joint Cope-Tarang email to the Tribe because it was not copied on the original email, and noting that Cope’s technical clarifications will be helpful to the agency team); email from Lori Blau, Ponderay Newsprint Co. to Ecology (Dec. 13, 2007) (encouraging Ecology to incorporate Cope’s suggestions into the TMDL); email from Helen Rueda, EPA, to TMDL MOA signatories (Jan. 7, 2008) (trying to manage the “confusion” created by the joint Cope-Tarang email and dismissing it as a “thought piece” rather than policy guidance).

² Compare Pend Oreille River TMDL MOA among the Kalispel Tribe, EPA, Ecology, and IDEQ (May 2005) (“Because the Washington portion of the Pend Oreille River abuts Kalispel Tribal waters, and these waters are impaired for temperature and TDG under the Kalispel Tribe’s water quality standards, EPA is the lead on a TMDL to address impairment to Tribal waters in the Pend Oreille River.”) *with* internal email from Jim Bellatty, Ecology (Nov. 7, 2008) (noting that Bellatty had a side conversation with Don Martin during an EPA-orchestrated meeting with the Tribe and Ecology designed to enhance future TMDL coordination, and that Martin indicated that he and Laurie Mann felt that Ecology had the “prerogative” to move forward” without the Tribe, *i.e.* break the terms of the MOA, if the Tribe continued to object to Ecology’s use of CFA); email from Don Martin, EPA, to Ecology and IDEQ (Dec. 1, 2008) (forwarding an email from the Tribe regarding the Tribe’s concerns with CFA and stating, “I am making attempts w/ the Tribe to delay any elevation of this issue until DOE and IDEQ are able to present the draft WLA / LA for the TMDL.”); internal memorandum from Karin Baldwin, Ecology (May 19, 2009) (referencing May 29, 2009 pre-meeting with EPA before a June 2, 2009 meeting with the Tribe and EPA regarding the future of MOA); email and attachment from Karin Baldwin, Ecology, to EPA (Aug. 3, 2010) (forwarding EPA Ecology’s draft response to the Tribe’s email regarding CFA’s masking of impairment at Stateline, and noting that Ecology would be meeting with EPA to discuss the Tribe’s concerns later in the day); email from Ben Cope to Ecology (Aug. 12, 2010) (forwarding the Tribe’s CFA concerns to Ecology in an effort to help Ecology bolster its defense of CFA); internal Baldwin email and attachments (Mar. 9, 2011) (dismissing Tribe’s concerns regarding CFA because Ben Cope and Helen Rueda have already indicated that they support Ecology’s decision to use it); internal Bellatty email (July 13, 2011) (forwarding confidential email from Don Martin to EPA staff and attorneys in which Martin forwards the Tribe’s agenda for an upcoming meeting with EPA, explains that EPA supports Ecology’s TMDL analysis, and asks for ideas on how to manage the Tribe’s concerns).

³ Compare email from Don Martin to Ecology (January 7, 2009) (forwarding agenda for EPA-Kalispel meeting to Ecology); Dec. 1, 2008 Martin email, *supra*, n.2; July 13, 2011 Bellatty email, *supra*, n.2 *with* May 19, 2009 Baldwin memo, *supra*, n.2; Aug. 3, 2010 Baldwin email, *supra*, n.2; Mar. 9, 2011 Baldwin email and attachments, *supra*, n.2 (attaching an email from Helen Rueda stating that Ecology has satisfied the concerns raised in Ben Cope’s August 12, 2010 email without copying the Tribe—even though Cope’s concerns emerged from an EPA meeting with the Tribe).

⁴ Email from Helen Rueda to Ecology (Mar. 3, 2011) (attaching Ben Cope’s edits to Ecology’s response to TMDL comments); Cope comments on Ecology’s responses to TMDL comments, pp. 9-12 (Feb. 18, 2011) (crafting arguments attempting to defend Ecology’s decision to use CFA, including a specific attempt to rebut the analysis of the Tribe’s consultant).

⁵ Email from Dustin Bilhimer, Ecology, to Ecology's TMDL Dispute Resolution Panel (July 5, 2011) (noting that Laurie Mann of EPA is a member of Ecology's Pend Oreille River Temperature TMDL dispute resolution panel).

⁶ See *supra*, note 2 (March 9, 2011 Baldwin email and attachments; July 13, 2011 Bellatty email).

⁷ Clean Water Act, 33 U.S.C. § 1377(e); 40 C.F.R. § 131.8; EPA Approval of Kalispel Tribe Treatment as a State Application, p.14 (2002) (recognizing that Kalispel are "People of the River" and have reserved fishing rights on the Pend Oreille River, and noting that "[p]rior to human degradation of water quality, the Tribal trout fishery on the Pend Oreille River was year round"); EPA Approval of Kalispel Tribe Water Quality Standards (2004); EPA Reaffirmation of 1984 Indian Policy (2009); 56 F.R. 64878-89 ("EPA . . . believes that Congress has expressed a preference for Tribal regulation of surface water quality to assure compliance with the goals of the CWA. This is confirmed by the text and legislative history of section 518 itself. The CWA establishes a policy of "recogniz[ing], preserv[ing], and protect[ing] the primary responsibilities and rights of States to prevent, reduce, and eliminate pollution, [and] to plan the development and use (including restoration, preservation, and enhancement) of land and water resources" section 101(b). By extension, the treatment of Indian Tribes as States means that Tribes are to be primarily responsible for the protection of reservation water resources."); *id.* at 64879 ("Water quality management serves the purpose of protecting public health and safety, which is a core governmental function, whose exercise is critical to self-government."); see also Kalispel Tribe slide presentation to EPA, slides 2-5 (Nov. 30, 2011).

⁸ Chesapeake Bay TMDL, App'x W, p. 206 (2010) ("As a legal matter, EPA is authorized to consider downstream water quality standards (including those in other states), when establishing or approving a TMDL."); Christina River Basin TMDL, p. 1-2 (2006) ("The Clean Water Act (CWA) requires that upstream waters must meet the applicable WQS of the downstream state at or before the state line. In other words, Pennsylvania and Maryland waters are required to meet Delaware's WQS at the state line.); Snake River – Hells Canyon Temperature TMDL, p. 57 (2004) ("Because of the bi-state nature of the SR-HC TMDL, and the fact that the Snake River from RM 409 to RM 188 is an interstate water body with the state boundary line described as the centerline of the river, water quality standards and particularly water quality criteria for both Oregon and Idaho must be attained."); Shenandoah River TMDL Decision Rationale, p. 3 (2001) ("The TMDL was modeled to insure that the water quality standard for PCBs would be met in both States."); Coeur d'Alene Basin TMDL, Technical Support Doc., pp. 2-3 (2000) (requiring attainment of downstream water quality standards); Columbia River Dioxin TMDL, p. A-2 (1991) (same).

⁹ Pend Oreille River Temperature TMDL, pp. 2 (Nov. 2011) ("Since the Tribe is affected by this TMDL, Ecology will work with those previously listed as well as Pend Oreille County to ensure that the Tribe's temperature standard is met for their waters."); internal email and attachment from Karin Baldwin, Ecology (Jan. 8, 2009) (noting that Baldwin is responsible for conveying Ecology's TMDL decision to EPA and attaching an outline of her presentation to EPA in which she states that Ecology has decided to "[u]se a cumulative frequency distribution analysis for state waters," and "[t]he Kalispel Tribe should decide the approach for Tribal waters"); internal email from Karin Baldwin (Jan. 7, 2009) ("There are impairments on tribal waters we are addressing. From the start of this TMDL, we have been analyzing the entire river, including Tribal waters Our approach has been to use the criterion which is the most restrictive - and Paul concluded it was our one day max of 20 degree C. (However, a day-to-day comparison of natural and existing temps shows the highest impairment compared to using the cumulative frequency distribution. So, I believe our approach now is that the Tribe can use which ever method to determine impairment they want for their waters, but we are still using the cumulative frequency distribution."); internal email from Paul Pickett, Ecology (Aug. 25, 2008) (recognizing that the

Tribe has the right to use whatever methodology it wants to determine compliance with its own water quality standards); internal email from Karin Baldwin (June 2, 2008) (acknowledging that the Tribe has the right to determine impairment of tribal waters through its preferred analysis if Ecology chooses a pooling period that the Tribe does not support); email from Susan Braley, Ecology (Apr. 30, 2007) (email chain including a previous email from Pickett to EPA and the Tribe asking: “I’d like to know if you approve of [a paired analysis] approach for the Kalispel Tribe standards. The difference will be that we apply both a 1-day maximum to 20.5 degC and a rolling 7-day average of daily maximums to 18.0 degC. I will make sure that model analyses show results from Tribal waters and compliance with Tribal standards separate from state waters.”); *see also* Pend Oreille River TMDL Watershed Advisory Group Meeting Notes (Apr. 28, 2008) (“Ecology will determine the impairment at the stateline, and IDEQ will determine the allocation for the Stateline.”); Nov. 7, 2008 Bellatty email, *supra*, n.2 (“[W]e let the Tribe and EPA know that we have a right to interpret our own standards.”).

¹⁰ Email from Ken Merrill, Kalispel Tribe, to EPA (Oct. 3, 2008) (“The Tribe has also consistently expressed the need to preserve temporal considerations in the application of any cumulative frequency analysis. The proposed method seems to purposefully not do this and again results in a way to weaken application of the criterion. Again this is not the approach we agreed to in previous discussions.”); email and attachment from Merrill to EPA (July 14, 2009) (“We also cannot support using a statistical manipulation of the data which ignores time-dependent aspects of river temperatures. This approach is apparently being used to minimize the appearance of temperature impacts in the Pend Oreille River while effectively allocating spring-time temperature credits to hydropower projects that are responsible for late-summer criteria violations.”); *id.* (attached comments, p.1) (“[L]ate-summer temperatures are significantly warmer than estimates of natural conditions. This results in Washington State and Kalispel water quality standard violations. Ecology’s current method of TMDL development inappropriately ignores portions of the State’s temperature criteria and violations of both State and Tribal water quality standards.”); email from Merrill to EPA (Aug. 13, 2010) (“[I]t is clear that the CFD method underestimates the frequency and magnitude of violations, and in some cases is used to claim the river is cooler in reaches where there is substantial river warming in late summer contributing to temperature violations.”); Kalispel Tribe TMDL comments (Nov. 30, 2010) (“The use of Cumulative Frequency Analysis (CFA) methodology has led to erroneous and misleading statements in the Draft TMDL and improper load allocations, now called target temperatures. The Kalispel Tribe has consistently objected to the misuse of the CFA methodology.”); Kalispel Tribe comments on revised TMDL (Sept. 30, 2011) (“The revised TMDL will not ensure compliance with Kalispel water quality standards because the cumulative frequency method of analyzing data obscures the thermal impact coming from Idaho and does not accurately account for the frequency or magnitude of temperature violations occurring within Kalispel waters.”).

¹¹ *Compare* Keta Waters Technical Memorandum to Merrill, p. 3 (June 10, 2011) (“Ecology’s cumulative frequency distribution approach under-estimates the maximum violation of the Tribe’s 1-day maximum criterion at the reservation boundary by a factor of 2.7 and under-estimates the maximum violation of the Tribe’s 7DADM criterion by a factor of 3.6.”); *id.* at 4, 17-19 (“Water flowing from Idaho across the Idaho/Washington Stateline is warmer under existing conditions than under natural conditions on most days when there are temperature violations at the Kalispel Reservation boundary.”) *with* Pend Oreille River Temperature TMDL, p.80 (Nov. 2011) (not achieving compliance with the Tribe’s own impairment determinations); *id.* at 73 (setting forth the assumption that existing water temperature conditions at Stateline are always colder than natural conditions).

¹² Pend Oreille River Temperature TMDL (Nov. 2011) p. 80 (“To achieve compliance with the Kalispel Tribe’s criteria, the one-day temperature maximum needs to be reduced by 0.27°C, and the seven-day average maximum temperature must be reduced by 0.22°C at segment 115 or river mile 72.4 (see Table

10). As stated above, these reductions are expected to occur through efforts to achieve the load allocation for the Box Canyon Dam forebay.”).

¹³ Internal email from Paul Pickett (Apr. 13, 2007) (asking Ecology management if they support using paired analysis); email from Pickett to Seattle City Light (Apr. 20, 2007) (informing SCL that Ecology will be using paired analysis); Apr. 30, 2007 Braley email, *supra*, n.9 (reconfirming Ecology’s decision to use paired analysis).

¹⁴ Internal email from Paul Pickett (Apr. 27, 2007) (“Here’s a preliminary sneak preview of my analysis: Currently WA standards are not met 31 days out of 2 years at the upstream boundary of the model (just below Albeni Falls dam). Of those 31 days, the river is still impaired on 25 days when it enters WA. Some of the impairments are in spring 2004, and some are in the summer months. The maximum impairment in the summer is about 1 degree above natural (0.7 degC of impairment). To put this in perspective, segments just above Box Canyon dam show over 90 days of impairment with maximum increases of over 2.5 degrees C (2.2 degC impairment). Boundary dam is showing over 50 days of impairment in critical locations with temperature increases of almost 3.5 deg C (3.2 degC impairment). Below Boundary dam there are over 100 days of impairment, which appears to be closely related to low flow events from dam operations.”); *see also* Pickett presentations to WAG regarding Washington and Kalispel temperature standards, Boundary Dam temperature compliance, and Box Canyon temperature compliance (June 25, 2007) (documents 86-88 in SCL Temperature TMDL Appeal Administrative Record Index).

¹⁵ Internal email from Paul Pickett (Apr. 27, 2007) (requesting a meeting with management to discuss blow back from the regulated community regarding Ecology’s preliminary findings of impairment); letter from Seattle City Light (“SCL”) to Ecology, pp. 6-7 (May 24, 2007) (suggesting that CFA be used instead of paired analysis to determine temperature impairment); comments from the U.S. Army Corps of Engineers (“USACE”), p. 2, statement 13 (June 20, 2007) (arguing that paired analysis is an invalid approach for determining temperature impairment); internal email from Susan Braley, Ecology (July 26, 2007) (indicating that Ecology has met with SCL to discuss its May 24, 2007 letter and that SCL is requesting a follow up policy meeting with Ecology to discuss lag time and how impairment will be determined); internal email from Melissa Gildersleeve, Ecology (July 27, 2007) (noting that SCL is frustrated with the direction management gave Paul Pickett); internal Braley email (July 31, 2007) (noting the SCL is “breathing down [Ecology’s] neck”); *compare* internal email from Paul Pickett (Aug. 31, 2007) (expressing frustration that USACE modelers are using the modeling group as a forum to push through policy issues such as what to do about lag time) *with* modeling call summary (Sept. 12, 2007) (Mike Schneider, USACE modeler: “The next issue that I will discuss is shown in the table under the heading ‘unusual conditions’. This is the uncertainties that arise when taking a snap shot in time rather than using averaged data. To capture a more accurate assessment of effects it is better to use thermal averaging over time.” Rob Annear, Portland State University modeler: “This sounds to me more like a policy issue rather than a technical issue because it deals with deciding how to interpret the model results.”); TMDL comments from SCL to Ecology, pp. 6-7 (Sept. 26, 2007) (criticizing the Draft TMDL’s use of paired analysis and citing the Willamette TMDL as a justification for using CFA to determine impairment); TMDL comments from USACE, p. 11 (Nov. 9, 2007) (again arguing that CFA should be used to determine temperature impairment); email from SCL to Ecology (Nov. 15, 2007) (requesting a TMDL policy meeting with Ecology); email from USACE to Ecology (Nov. 16, 2007) (requesting a TMDL policy meeting with Ecology); email from Paul Pickett to SCL (Nov. 21, 07) (referencing the fact that Ecology met with SCL on 11/20/07); email from SCL to Melissa Gildersleeve (Nov. 21, 2007) (again requesting a policy meeting with Ecology); email from SCL to MOA signatories (Nov. 27, 2007) (noting that SCL will be presenting the same technical presentation that its consultant presented at the Nov. 20, 2007 technical meeting with Ecology).

¹⁶ Internal email and attachment from Jim Bellatty, Ecology (June 22, 2007).

¹⁷ Email from Melissa Gildersleeve to SCL (Nov. 28, 2007) (notifying SCL for the first time that Ecology has decided to use CFA).

¹⁸ Email from Paul Pickett, Ecology, to Laurie Mann, EPA (Nov. 30, 2007) (responding to an email in which Mann asks, “Does the Pend Oreille have a standard that can be applied weekly?” Pickett states: “Short answer is ‘no’. Longer answer: The standards for Pend Oreille says one-day max, but the generic standards say 7-day average. The lag time issue comes from comparing a max to a max. My suggestion for melding the two is to use a 7-day period to pool daily max data for a cumulative distribution approach.”); email from Susan Braley to Laurie Mann (Nov. 30, 2007) (responding to Mann’s inquiry by stating: “The special condition in Table 602 for the Pend Oreille is established as a 1-day maximum because that is what the standards metric was before we revised our water quality standards in 2003. We made a deliberate decision not to change any of the special conditions because they hadn’t been earmarked as part of our proposed revisions. In hindsight, it may have made sense for us to go in and change things like metrics since the decision to go to a 7DADMax was based on the most updated science of what is best reflective of what fish need. In fact, it is the recommendation made by EPA in the Regional Temperature project. As an example, in the last 303(d) listing process we assessed temperature data based on the 7DADMax even though the standards were set as one day maxs. So, my recommendation was that we use the seven day metric for the Pend Oreille for the modeling exercise-- since it is widely accepted and clearly more scientifically appropriate. On a related note, I believe 7DADMax is the metric being used by Idaho and the tribe as well, so really could also be considered a matter of consistency in the inter-state tribal approach to this TMDL.”); internal email from Susan Braley (Dec. 3, 2007) (“I would feel comfortable applying the 7DADMax metric. As my example indicates, we used it for the last 303(d) list even without having it formally approved, and EPA accepted it.”); internal email from Paul Pickett (Dec. 3, 2007) (“I would use the 1 day maximum temperatures and then determine the cumulative distribution of temperature over 7 days (using rolling 7-day periods). I would not directly calculate a 7-day average for comparison to standards.”); internal email from Karol Erickson, Ecology (Dec. 3, 2007) (“For what it’s worth, I believe Paul’s approach is more true to the standards. Mark Hicks had always told me that if we change from a one-day to a seven-day we should change the number by one degree.”).

¹⁹ Nov. 30, 2007 Braley email, *supra*, n. 18 (noting that the 7DADMax standard “was based on the most updated science of what is best reflective of what fish need”); MOA signatories telephone call summary (Jan. 23, 2008) (“The data was pooled by 7 day increments because Washington’s non-site specific water quality standards are designated as 7-day average of daily maximum temperatures. Though the site-specific criteria for the Pend Oreille River is a daily maximum, there are studies, upon which Washington’s standards are based, that show a 7 day period as the maximum time before significant impairment of habitat begins. . . . The group agreed we should communicate to the WAG that the CDF analysis was intended to evaluate the effect of the 1 to 2 day lag time as an issue raised by commenters, and we used the 7-day pooling of data, because it is the only biologically-based time frame we currently have.”); Ecology’s outline for slide show responding to TMDL comments (Feb. 25, 2008) (noting that research “shows that 7 days is the time when impacts to fish begin to occur,” that “lag time of the Boundary Reservoir is report[ed] at 1-2 days, which would be captured within [a] 7 day [pooling] period,” that “Ecology could provide justification in the TMDL why we are pooling one day maximums over 7 days,” that “this justification would be needed for EPA approval,” and that “Ecology has no such justification for pooling beyond 7 days.”); Ecology’s Pend Oreille River Temperature TMDL Peer Review Meeting Notes (May 7, 2008) (“Pooling periods should be based on the type of aquatic life and the life stages that occur during the critical period; however, we do not have that information. A 7 day pooling of data will nullify the 1 to 2 day lag times, but not larger lags.”).

²⁰ MOA signatories telephone call summary, *supra*, n.19 (noting that eliminating lag time through a 7-day CFA “had little effect on the outcome”); Ecology’s outline for slide show responding to TMDL comments, *supra*, n.19 (concluding that Ecology will use a traditional paired analysis to determine temperature impairment because “the results of its original [paired] analysis and frequency distribution are not that different”); Paul Pickett slide show to WAG, slide 17 (Feb. 25, 2008).

²¹ See *supra*, nn. 19-20; internal email from Karin Baldwin (Jan. 25, 2008) (“I am going to stick with a load allocation based on a one day maximum temperature that is applied throughout the critical period. This is consistent with 1 day max standard for the Pend Oreille and our decision to use the existing results (based on one day max) rather than continue analyzing the 7 day pooled data to address lag time.”).

²² Email from Kent Easthouse, USACE, to Paul Pickett (Jan. 28, 2008) (urging Ecology to use a CFA with a 93-day pooling period); internal email from Karin Baldwin (Feb. 1, 2008) (forwarding Easthouse’s email to management and explaining that “[d]uring the call I told them we would not look at a frequency analysis longer than 7 days”).

²³ Internal email from Paul Pickett (Oct. 4, 2007) (explaining that Pickett’s analysis shows significant reductions in impairment when a CFA is performed over a month and that impairment disappears entirely when data is pooled over an entire year); *compare* internal email from Karin Baldwin (Jan. 2, 2008) (“We got talking about addressing lag time and Bob Steed from IDEQ said that if we use a frequency analysis, then that would likely make the impairment in Idaho disappear.”) *with* email from Karol Erickson, Ecology, to Karin Baldwin (Jan. 2, 2008) (responding to the preceding parenthetical, Erickson states: “I will explain to you why that actually makes sense.”); internal email from Paul Pickett (Mar. 4, 2008) (attaching a document in which Pickett states: “The [regulated community is] going to dog [Ecology’s decision not to exceed a 7-day pooling period] because by using a full season frequency distribution the impairments disappear.”); Ecology’s Policy Determination Regarding Use of Cumulative Frequency Analysis in the Pend Oreille River Temperature TMDL (April 24, 2008) (setting forth Ecology’s policy decision to use paired analysis to determine impairment instead of CFA); May 7, 2008 Peer Review Meeting Notes, *supra*, n.19 (“A 7 day pooling of data will nullify the 1 to 2 day lag times, but not larger lags. If you pool the data for 3 months, the impairment disappears. Pooling the data from the month of August shows some impairment, but less than it would be using a 7 day pooling period.”).

²⁴ Internal email from David Knight, Ecology (May 30, 2008) (discussing Ecology’s intent to replace Paul Pickett with Tony Whiley); internal email from Karin Baldwin (June 12, 2008) (further discussion of Whiley’s transition to technical lead); *compare also* internal email from Karin Baldwin (June 3, 2008) (telling Whiley that Ecology has decided to use CFA over a full season) *with* email from Paul Pickett to Karin Baldwin (June 12, 2008) (attaching Pickett’s edits to Baldwin’s notes from Ecology’s May 12, 2008 peer review meeting to include the following: “[T]he decision was made to tell the group we would go back and look only at a 7 day pooling period because a longer time frame could mask impairment and we have no information to support any specific longer pooling period”); email from Paul Pickett to Karin Baldwin (June 19, 2008) (modifying a statement from Baldwin’s notes on a June 18, 2008 meeting with the Tribe from “[cumulative frequency] analysis does not mask impairment” to “[cumulative frequency] analysis does not mask impairment if appropriate pooling periods and reaches are selected, but can mask impairment if the pooling periods or reaches are too large”); internal email from Karin Baldwin (June 19, 2008) (“I do feel like Paul doesn’t want to run as many scenarios as Tony would.”).

²⁵ Email from Karin Baldwin to Ken Merrill, Kalispel Tribe (April 22, 2009).

²⁶ Aug. 12, 2010 Cope email, *supra*, n.2 (advising Ecology to draw from Willamette TMDL to defend its decision to use CFA).

²⁷ Email from Karin Baldwin to Helen Rueda and Ben Cope (Sept. 1, 2010) (“I am working on beefing up the cumulative frequency distribution information. In your email, Ben, you mentioned information in the Willamette TMDL. I have looked through the temperature chapter and appendix and there is no description or rationale for using the approach given that I can find. I read where they created the distributions, but cannot find any additional information. Did you have a particular section in mind that you can point me to?”).

²⁸ Compare email from Helen Rueda to James Bloom, Oregon Dep’t of Env’t Quality (Sept. 1, 2010) (“Hi Dan and Jim[,] I think one of you worked on the Willamette TMDL for temperature? Can you give Karin at Ecology information on the rationale for using cumulative frequency distribution in that TMDL? Is there a part of the document that you can point her to that explains the rationale?”) with email from James Bloom to Helen Rueda (Sept. 7, 2010) (“Cumulative frequency distribution plots are useful in cases where a project warms a water body at certain locations and times and cools it at others. They provide a means of quantifying the overall impact of a project. However, I don’t think the TMDL or other documents provide much additional in the way of justification for use of them than this.”); *see also* email from Karin Baldwin to James Bloom (Sept. 8, 2010) (“Thanks for your help. EPA is asking us to write a half page plus rationale [in] the TMDL for using the cumulative frequency distribution over a day-to-day analysis because we have a stakeholder that is against using a cumulative frequency distribution.”).

²⁹ Internal email from Karin Baldwin (Sept. 8, 2010). Ecology and other entities have specifically noted pronounced differences between the Pend Oreille and Willamette Rivers. See June 22, 2007 Bellatty email and attachment, *supra*, n.16 (“The example of the recently approved Willamette Basin Temperature TMDL you referenced was done under Oregon’s standards for lakes and reservoirs, which are very different from Washington’s. Similarly, flow-weighted averages are informative, but not applicable to Washington’s standards in the Pend Oreille River. While these differences may be frustrating, Washington’s state standards must be used to determine the best modeling approach for TMDLs.”); MOA signatories telephone call summary, *supra*, n.19 (“Rob Annear stated . . . In the case of the Willamette TMDL the removal of point source flows cause small changes in the travel time of water on large spatial scales. The change in travel time was removed from the system investigate the impact of the discharge heating not the change in flows. This was specific to the Willamette River TMDL because these model scenarios were determining the load allocations for point sources. In the case of the Pend Oreille River the impact of the dam itself is being investigated whether its changes in travel time, quantity of water, water level, velocities, or temperatures. Rob also noted that a CDF analysis was also used in the Willamette TMDL because it was a complex system.”).

³⁰ Keta Waters memorandum to Ken Merrill, p. 7 (Mar. 6, 2012).

³¹ MOA signatories telephone call summary, *supra*, n.19 (“There was a discussion about the value of using the CDF analysis. Paul thought it was a good way to check whether the 0.3 to 0.4 model error that is generally considered to cancel out might propagate at different rates because of time lag between with and without dam scenarios. Rob Annear stated that this was not the case that while the CDF analysis is useful it does not investigate the model-data error or the time lag between scenarios issues specifically. He also stated that the lag time between dam and no scenarios was an effect or ‘impairment’ caused by the dams. The effect of the time lag between the scenarios should be considered and not ‘removed’ from the model comparisons.”).

³² Jan. 28, 2008 Easthouse email, *supra*, n.22; Easthouse email to MOA signatories (Feb. 21, 2008) (“Frequency analysis provides an assessment of temperature differences between modeled existing and natural conditions in a non-temporal method and thus removes problems associated with daily temperature comparisons when travel time differences exist between model scenarios.”); Sept. 7, 2010

Bloom email, *supra*, n.28; *see also* internal TMDL peer review email from Ryan Anderson, Ecology (June 11, 2010) (“I can see how the cfd graphics output is very useful to describe the relatively low percent of times the river is warmer than standards allow, but it is not clear how this related to compliance.”).

³³ Statement of Ben Cope to Kalispel Tribe during our Nov. 30, 2011 meeting in Seattle.

³⁴ *Supra*, nn.18-19.

³⁵ *Id.*

³⁶ Internal email from Susan Braley (May 6, 2008) (in response to an email from Pickett in which he notes that the CFA pooling period should be limited by biology and suggests forming a biological review team to investigate the question, Braley notes that she agrees that the pooling period should be limited by an “estimation of what the biology will take,” but goes on to state: “I think if we can find some precedence that got past EPA approval, we shouldn’t spend a lot of time with the biologists . . .”).

³⁷ 16 U.S.C. § 1536(a)(2); 50 C.F.R. § 402.14(a); *see also Northwest Env’tl Advocates v. EPA*, 3:05-CV-01876-AC, 2012 WL 653757 at *3 (D. Or. Feb. 28, 2012); EPA letter approving Klamath River TMDL, p. 2 (Dec. 28, 2010) (acknowledging that TMDL approval requires section 7 consultation under the Endangered Species Act); *see also* internal email from Susan Braley (Jan. 25, 2011) (“I don’t think we need to try to justify that we are protecting critical bull trout habitat, rather we should just stick by our guns that the CFD method is scientifically sound and that’s what we used.”).

³⁸ March 8, 2012 Keta Waters memorandum.

³⁹ Internal email and attachment from Susan Braley (Nov. 30, 2007) (In response to SCL’s comment that “[a]nalysis should account for temperature increases resulting from lag time[, which is] . . . a ½ day to 1 ½ day time period,” Ecology states: “We agree that there can be a, propagation of errors due to lag time and it merits some attention. Ecology will develop a cumulative probability approach and determine its feasibility as an alternative method.”).

⁴⁰ *See supra* n.15 (May 24, 2007 SCL letter at 6-7; June 20, 2007 USACE comments at 2, statement 13; Sept. 26, 2007 SCL comments at 6-7; Nov. 9, 2007 USACE comments at 11; *but see* Tony Whiley Temperature Analysis Memo (Jan. 8, 2009) (“The transit time through the study reaches is on the order of days as opposed to weeks so despite volume and water column profile changes (increased depth) the movement of water through the study area has not changed substantially. This is the reason why if natural and existing daily temperature recordings (i.e. daily maximums) are plotted together there is not a substantial shift or time lag evident between the two.”).

⁴¹ Sept. 26, 2007 SCL comments, *supra* n. 15 at 6-7.

⁴² Internal email from Paul Pickett (Nov. 30, 2007) (attaching Summary of Pend Oreille Temperature TMDL Technical Meeting between SCL and Ecology).

⁴³ Ecology’s CFA Policy Determination, *supra* n.23 (“Another problem is that if the pool of data is too large, then non-compliance can be masked. For example, if data is pooled from June through September, and if temperatures are cooler in June but warmer in September, the distributions may be identical but the resource may still be harmed by the warmer temperatures in September. Therefore different time and space scales for pooling data should be evaluated to determine the reasonable size.”).

⁴⁴ Compare Pend Oreille River Temperature TMDL (Nov. 2011) with June 10, 2011 Keta Waters Memo, *supra* n.11 at 21-25; see also Draft TMDL (Aug. 2007).

⁴⁵ Internal email from Karin Baldwin (Sept. 2, 2010) (forwarding an email from SCL's consultant, Tarang Khangaonkar, to Tony Whiley in which Tarang states: "It also looks like Ecology has retained frequency analysis approach. Once again I must Thank You for your efforts in convincing your management of the merit of this approach.").

⁴⁶ Internal email from Susan Braley (July 25, 2008) ("There are many parts of [state water quality] standards that we choose not to implement in TMDLs."); see also Nov. 30 and Dec. 3, 2007 Braley emails, *supra*, n. 18 (noting that EPA approved the State's 303(d) list based on water quality standards that were not yet approved). The TMDL is also arbitrary and capricious in its failure to identify and restore thermal refugia necessary to protect native fish. *Northwest Env'tl Advocates v. U.S. E.P.A.*, 3:05-CV-01876-AC, 2012 WL 653757 at *12 (D. Or. Feb. 28, 2012).

⁴⁷ *Supra* n.11; compare also Pend Oreille River Temperature TMDL, p. 80 (Nov. 2011) (showing a maximum exceedence of 0.27°C in Kalispel waters using CFA) with internal email from Tony Whiley (Oct. 2, 2008) (attaching a table showing an exceedence of 1.74 °C in Kalispel waters using paired analysis); see also internal email from Karin Baldwin (June 17, 2010) (attaching talking points for a June 17, 2010 meeting with the MOA signatories, including "4. We've analyzed the data using a variety of methods and the amount of impairment is not that different.").

⁴⁸ *Supra* n. 11; see also attachment to June 17, 2010 Baldwin email, *supra* n.47 (acknowledging that September draw down of Lake Pend Oreille will improve downstream temperature conditions); May 24, 2007 SCL letter, *supra* n. 15 at 2 ("Our preliminary analysis suggests that much of the thermal load originates above the Albeni Falls Dam. If temperature effects in the Pend Oreille are to be successfully addressed, it is imperative that all significant sources are examined. This is a fundamental concern of SCL's since the Boundary Project is at the far downstream end of the TMDL area.").